

## **MODULE 4**

### **STORAGE AND TREATMENT IN TANK SYSTEMS**

#### **4.A.        APPLICABILITY**

- 4.A.1.        The requirements of this module pertain to the storage and treatment of hazardous waste in tank systems. The Permittee shall comply with all requirements established in this permit when storing and/or treating any wastes or other materials in the tank systems, including those which do not carry an EPA waste code (e.g. industrial waste, exempt hazardous waste, site generated waste, non-hazardous waste, etc.).
- 4.A.2.        The Permittee may store wastes, as outlined in this module, in the tank systems specified below. Storage of wastes in any other tanks or tank systems is prohibited.
- a.    Blend Liquids Tanks, designated as T-301, T-302, T-303, T-304, T-305, T-306, T-309, T-310, T-321, T-322, T-323, and T-324.
  - b.    Aqueous Liquids Tanks, designated as T-307, T-308, T-311, and T-312.
  - c.    Small Sludge Tank, designated as T-406.
  - d.    Large Sludge Tank, designated as T-401.
  - e.    Small Bulk Solids Tank, designated as T-403
  - f.    Large Bulk Solids Tanks, designated as T-404A and T-404B.
- 4.A.3.        The Permittee may treat wastes in the tanks or tanks systems listed below. The treatment operations that may occur are blending and mixing as described in Attachment 8. Shredding into tank T-404B may also occur as described in Attachment 8. Any other treatment of waste in tanks or tank systems is prohibited.
- a.    Blend Liquids Tanks, designated as T-301, T-302, T-303, T-304, T-305, T-306, T-309, T-310, T-321, T-322, T-323, and T-324.
  - b.    Aqueous Liquids Tanks, designated as T-307, T-308, T-311, and T-312.
  - c.    Small Sludge Tank, designated as T-406.

- d. Large Sludge Tank, designated as T-401.
- e. Small Bulk Solids Tank, designated as T-403
- f. Large Bulk Solids Tanks, designated as T-404A and T-404B.

4.B. OPERATION AND MAINTENANCE

- 4.B.1. The Permittee shall maintain and operate the tank systems in accordance with the drawings contained in Attachment 10.
- 4.B.2. Modifications to the drawings for the tank systems shall be allowed only in accordance with the permit modification requirements in Condition 1.D.
- 4.B.3. The Permittee shall not proceed with construction or installation of a new or modified tank system without the approval of the Executive Secretary unless construction is allowed as outlined in Condition 1.D. For any construction or installation of a new or modified tank system, the Permittee shall provide a written assessment, reviewed and certified by an independent, qualified Utah registered professional engineer, that attests to the structural integrity and the suitability of the new or modified tank system for handling the specified hazardous waste in accordance with R315-8-10. (40 CFR §264.192 incorporated by reference).
- 4.B.4. All process monitors, required pursuant to Condition 4.E. shall be equipped with alarms operated to warn of deviation or imminent deviation from the limits specified in Condition 4.D.
- 4.B.5. The Permittee shall maintain the tank systems and ancillary equipment in good repair. Routine maintenance shall be performed at sufficient frequency to ensure that the tank systems and ancillary equipment remain in good repair. Malfunctions and deterioration shall be corrected as expeditiously as possible.
- 4.B.6. The tank systems shall be designed, constructed, maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden discharge of hazardous waste or hazardous waste constituents to the air, soil, groundwater, surface water or any other location which could threaten human health or the environment.
- 4.B.7. The Permittee shall comply with the provisions specified in the Fume Management Plan, Attachment 14.

- 4.B.8. The Permittee shall comply with the provisions specified in Attachment 8 -- Waste Storage, Processing, and Tracking.
- 4.C. PERMITTED AND PROHIBITED WASTES
- 4.C.1. The Permittee may store and/or treat in any of the tanks or tank systems the wastes identified in Condition 2.C.1. unless prohibited in Conditions 4.C.2. through 4.C.6. subject to the requirements of this permit.
- 4.C.2. The following shall not be stored and/or treated in any of the tanks or tank systems at any time:
- a. Any waste or material identified in Condition 2.C.2.
  - b. Waste with the codes F020, F021, F022, F023, F026, F027, and F028.
  - c. Infectious wastes.
  - d. Oxidizers as described in R315-2-9(d)(1)(iv).
  - e. Self-heating materials (defined as DOT Division 4.2(2)).
- 4.C.3. The following shall not be stored and/or treated in any of the tanks or tank systems identified in Conditions 4.A.2.c. and 4.A.2.d. (small sludge tank, and large sludge tank) at any time:
- a. Wastes or materials with a flash point less than or equal to 140°F.
- 4.C.4. The following shall not be stored and/or treated in any of the tanks or tank systems identified in Conditions 4.A.2.e. and 4.A.2.f. (small bulk solids tank, and large bulk solids tanks) at any time:
- a. Wastes or materials with a flash point less than or equal to 140°F.
  - b. Wastes or materials which have greater than 25% of the lower explosive limit (LEL) of any flammable component.
  - c. Wastes or materials which have a temperature greater than 140°F.
  - d. Wastes or materials which exhibit the characteristic defined in R315-2-9(d)(1)(ii).
- 4.C.5. Blend liquid tank T-309 may be used for dedicated service at the discretion of the Permittee. However, when the tank is in dedicated service, the tank may only contain wastes from a single waste stream at any given time. Before changing waste streams or beginning or ending dedicated service, the Permittee must triple-rinse the tank and associated piping with an appropriate solvent such that no undesirable reaction will occur with subsequent use of the tank.

- 4.C.6. The following shall not be placed into any of the tanks or tank systems identified in Conditions 4.A.2.a. (blend liquids tanks) and 4.A.2.b. (aqueous liquids tanks) at any time:
- a. Wastes or materials with a pH of less than 2.0 or greater than 12.5.
  - b. Wastes or materials with a pH of less than 2.0 or greater than 12.5 may be placed in blend liquid tank T-309 as long as the waste is compatible with the tank system construction material.

4.D. OPERATING REQUIREMENTS

- 4.D.1. All tanks identified in Conditions 4.A.2.a. (blend liquids tanks), 4.A.2.b. (aqueous liquids tanks), and 4.A.2.d. (large sludge tank) shall be nitrogen blanketed.
- 4.D.2. All tanks identified in Conditions 4.A.2.a. (blend liquids tanks), 4.A.2.b. (aqueous liquids tanks), and 4.A.2.d. (large sludge tank) shall have emergency pressure relief valves that shall be vented to atmosphere.
- 4.D.3. All tanks identified in Conditions 4.A.2.a. (blend liquids tanks) and 4.A.2.b. (aqueous liquids tanks) shall be equipped with an anti-static inlet.
- 4.D.4. The Permittee shall empty, visually inspect for the general condition of each tank, and measure the corrosion of each tank identified in Conditions 4.A.2.a. and 4.A.2.b. (blend liquids tanks and aqueous liquids tanks) at least once each year and certify that it can safely store hazardous waste. The dedicated header to tank T-309 shall be similarly inspected and measured annually, and a certification made that it can safely manage hazardous waste. At least once every four years, the Permittee shall empty, visually inspect, and measure the corrosion in each tank identified in Conditions 4.A.2.c. through 4.A.2.f. (small sludge tank, large sludge tank, small bulk solids tank, and large bulk solids tanks), and certify that each tank can safely manage hazardous waste. These inspections and tests must be certified by an independent, qualified Utah registered professional engineer.
- 4.D.5. The Permittee shall maintain the level of each tank identified in Conditions 4.A.2.a. through 4.A.2.d. (blend liquids tanks, aqueous liquids tanks, small sludge tank, and large sludge tank) at or below the compliance limit specified in Attachment 9.
- 4.D.6. The Permittee shall maintain the level of waste in each tank identified in Conditions 4.A.2.e. (small bulk solids tank) and 4.A.2.f. (large bulk solids tanks) at or below the divider between tanks T-404A and T-404B.

- 4.D.7. All tanks identified in Conditions 4.A.2.a. through 4.A.2.d. (blend liquids tanks, aqueous liquids tanks, small sludge tank, and large sludge tank) shall be equipped with high level alarms that shall be positioned as specified in Attachment 9.
- 4.D.8. All tanks identified in Conditions 4.A.2.a. (blend liquids tanks), 4.A.2.b. (aqueous liquids tanks), and 4.A.2.d. (large sludge tank) shall be equipped with a waste cutoff that shall be activated as specified in Attachment 9.
- 4.D.9. Wastes or other material may be placed in a tank or tank system only if it is compatible with the wastes already stored in the tank, and compatible with the tank or tank system construction material.
- 4.D.10. The Permittee shall not place hazardous wastes, treatment reagents, or other materials in any of the tank systems if they could cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail.
- 4.D.11. Ignitable wastes stored in any of the tanks identified in Conditions 4.A.2.a. (blend liquids tanks) and 4.A.2.b. (aqueous liquids tanks) shall be protected from sources of ignition.
- 4.D.12. No reactive waste shall be stored and/or mixed in any of the tank systems identified in Conditions 4.A.2.a. through 4.A.2.f. (blend liquids tanks, aqueous liquids tanks, small sludge tank, large sludge tank, small bulk solids tank, and large bulk solids tanks). Bulk liquids tank T-309 shall be exempt from this requirement when used for dedicated service.
- 4.D.13. The Permittee shall not place hazardous waste in a tank system that has not been decontaminated and that previously held an incompatible material. Decontamination solutions generated from cleaning tank systems shall be considered a hazardous waste and shall be managed appropriately.
- 4.D.14. The Permittee shall prevent spills and overflows from the tank or containment system.
- 4.D.15. The Permittee shall equip all pumps that are not within a secondary containment area with drip pans to collect any spillage that may occur.
- 4.D.16. The secondary containment systems shall be operated and maintained such that they shall be free of both cracks and gaps and are sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.
- 4.D.17. If a sump, drip pan, or secondary containment area contains any material, it will be emptied within 24 hours of discovering the contents. This means that all

material, liquid, or solid, or both, will be removed. If ongoing precipitation prevents the emptying of all material from a sump or secondary containment system located outside of a building, the sump or secondary containment system will be emptied within 24 hours of the end of the precipitation event. However, sufficient material must be removed during the event to maintain sufficient secondary containment capacity of the system. Solid material which accumulates in sumps inside buildings from the routine processing of containers (e.g. dried mud falling off of pallets, small pieces of wood from pallets, dust, etc. (but not spill material)) may be removed weekly.

Any material removed will be managed as a hazardous waste except for liquid collected in sumps SP-614A, B, C, and D and their associated bermed areas which is returned to the incineration exhaust gas neutralization system for use in the neutralization process.

- 4.D.18. Containment for 25% of the entire volume of waste held within the containment area or 100% of the volume of the largest tank in the containment area, which ever is greater, shall be provided for each tank area.
- 4.D.19. No smoking shall be allowed within 50 feet of any of the tank systems. The Permittee shall take precautions to prevent accidental ignition or reaction of waste. The waste shall be separated and protected from sources of ignition or reaction including, but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g. from heat-producing chemical reactions), and radiant heat. Such sources of ignition shall be allowed only after adequate additional precautions have been taken to prevent ignition of wastes or other materials and a hot work permit has been issued.
- 4.D.20. The Permittee shall unload any transport vehicle within fifteen days of being received at the facility. The waste shall be placed in one of the permitted tanks identified in Condition 4.A.2. If unforeseen analytical complications occur, this time frame may be extended by oral authorization from the Executive Secretary.
- 4.D.21. The concentration of oxygen in the hydrocarbon vent system shall be maintained below 5%. If the oxygen concentration exceeds 5%, the control system shall generate an alarm and corrective action will immediately be taken to reduce the oxygen concentration to below 5%. The cause of the elevated oxygen concentration and the corrective actions taken shall be noted in the operating record.
- 4.D.22. The mixed contents of any tank or tank system identified in Conditions 4.A.2.a. (blend liquids tanks) and 4.A.2.b. (aqueous liquids tanks) shall not exhibit a pH of

less than 4.5 or greater than 12.5 (except as allowed in Condition 4.C.6.); nor shall it be at a temperature greater than 125°F at any time. Additionally, the temperature of the contents of any tank or tank system identified in Conditions 4.A.2.a. (blend liquids tanks) and 4.A.2.b. (aqueous liquids tanks) shall not exceed 100°F for more than 10% of the days in a calendar year.

4.D.23. Tanks T-305, T-306, T-311, and T-312 may be operated without the internal coating in place. If the internal coating is removed, it shall be removed using acceptable industrial practices as the tanks are taken out-of-service, drained and cleaned for a scheduled inspection.

4.D.24. Pipe spools connecting tank T-309 to non-dedicated headers shall be removed when the tank is used for dedicated service.

4.D.25. When feeding waste to the incinerator from any of the tanks identified in Conditions 4.A.2.e.(small bulk solids tank) and 4.A.2.f.(large bulk solids tanks), and the waste feed includes material having an LEL greater than 10%, the Permittee shall operate the nitrogen purge system located in the front wall feed chute as described in Attachment 14. Bulk solids materials with an LEL greater than 10% shall not be fed unless the nitrogen purge system is operating properly.

4.E. MONITORING, RECORD KEEPING, AND CALIBRATION REQUIREMENTS

4.E.1. The Permittee shall maintain and operate the monitoring and recording equipment specified in Attachment 16 while storing and/or treating hazardous waste in the tank systems. The data shall be monitored and recorded in accordance with Attachment 16. The monitoring equipment specified in Attachment 16 shall provide accurate data. If the level transmitter for a tank fails to operate correctly, the inlet of the tank will immediately be locked out so that no additional waste can be added to the tank until the instrument is repaired. If material is removed from the tank during this time, the volume will be measured manually and recorded in the operating record.

4.E.2. An alarm will be generated in the plant control system whenever the nitrogen pressure in a tank falls below 1" W.C. or rises above 7" W.C.

4.E.3. An alarm will be generated in the plant control system whenever fumes from the fume management system are no longer being vented to the afterburner (i.e. whenever K-104 stops, HV1301 closes, or both).

- 4.E.4. Alarms generated by the plant control system shall be recorded and made available for review by the Executive Secretary.
- 4.E.5. The monitoring instruments shall be calibrated in accordance with Attachment 13.
- 4.E.6. The Permittee shall provide access to the data archiving system (PI) for the Executive Secretary to review. This shall be accomplished by making available a remote link to the computer system and the appropriate query system for accessing the required data. Data to be accessible include the data required to be maintained in Attachment 16.
- 4.E.7. All wastes or materials placed into the tanks shall be tracked in accordance with the waste tracking provisions of Attachment 8. The Permittee shall provide access to the electronic waste tracking system portion of the operating record for the Executive Secretary to review. This shall be accomplished by making available a remote link to the computer system and the appropriate query system for accessing the required data. Data to be accessible include manifest information, load sample analyses, weights, current locations, movement histories, and the dates/times incinerated or transferred off-site.
- 4.E.8. The Permittee shall maintain at the facility a record of the results of integrity tests and other inspections required in Condition 4.D.
- 4.E.9. The Permittee shall maintain at the facility all written assessments and certifications relating to the design and installation of the tank systems that attest to the structural integrity and the suitability of the new, modified, or repaired tank system for handling the specified hazardous waste. These shall be maintained until such time that the tank system is certified closed in accordance with Attachment 7.
- 4.E.10. Records of releases from a tank system that are contained within a secondary containment system shall be maintained in the operating record. These records shall include information on the cause of the release, the volume and type of material released, any injuries or damage caused by the release, and corrective actions taken.
- 4.E.11. The Permittee shall notify the Executive Secretary in writing prior to using tank T-309 for dedicated service, prior to switching waste streams, and prior to discontinuing dedicated service. This notification will include information on the waste to be handled, its compatibility with the tank and piping, and the procedure that will be used to clean the tank and piping after use.



4.F. RESPONSE TO LEAKS OR SPILLS

4.F.1. In the event of a leak or a spill from a tank system, or if the tank system becomes unfit for continued use, the Permittee shall remove the system from service immediately and complete the following actions:

- a. Stop the flow of hazardous waste into the tank system and inspect the system to determine the cause of the release.
- b. Remove waste and accumulated precipitation from the tank system and containment system within 24 hours of detection of the leak or spill to prevent further release and allow inspection and repair of the system. If the Permittee finds that it will be impossible to meet this time period, the Permittee shall orally notify the Executive Secretary and demonstrate that a longer time period is required.
- c. Manage the collected material as a hazardous waste in accordance with all applicable requirements of R315-5.
- d. The Permittee shall make any necessary repairs to fully restore the integrity of the tank system before returning the system to service.
- e. For all major repairs to eliminate leaks or restore the integrity of the tank system, the Permittee shall obtain a certification by an independent, qualified Utah registered professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. Examples of major repairs are: installation of an internal liner, repair of a ruptured tank, or repair or replacement of a secondary containment vault.

4.F.2. In the event that a leak or spill from a tank system escapes the secondary containment system, the Permittee shall complete the following actions in addition to those specified in Condition 4.F.1.:

- a. The Permittee shall immediately conduct a visual inspection of all releases to the environment and based on that inspection shall (1) prevent further migration of the leak or spill to soils or the surface water and (2) remove and properly dispose of all contamination of the soil or surface water.

4.F.3. If the Permittee replaces a component of a tank system to eliminate a leak, that component must satisfy the requirements for new tank systems or components in R315-8-10. (40 CFR §264.192 and §264.193 incorporated by reference).

- 4.F.4. If a tank system cannot be repaired or is otherwise unfit for continued use, the Permittee shall close that tank system in accordance with the Closure Plan in Attachment 7.